of the committee deputed to collect these facts, made to the Legislature in 1836, they declare 'that the horrors of the present condition of the insane are far from having been exaggerated.'"

The following selections are from the remaining portion of this section of the report.

"The theory and policy of the guardians, as well as the successive physicians, has been to reduce the difference between the wards of the Asylum and a well-regulated household, to the lowest point consistent with safety, and the integrity of the best curative agencies."

"Even in the wreck of reason and responsibility, nature has kindly provided that the human being need not be wholly a wreck. Such is the organization, that, like an automatic machine, when the intelligent, directing mind is cast from its supremacy, still, under a law of habit, if the individual can be under the influence of another mind to keep him in motion, he will follow to a great extent the routine of ordinary life, when, without this exterior influence, he would subside into stupid inaction, and fall under the direction of the mere animal instincts. It is by availing themselves of this principle, that asylums, in cases of the incurable, are able to transform what would otherwise be little more than existence into a life possessing many rational occupations and enjoyments."

"Of the 1927 who have been received into the Asylum, 841 have been restored to mental soundness. * * * It is not easy to calculate the value of the restoration to society of this considerable number of insane, or to estimate the amount of pain and sorrow mitigated or relieved by their escape from a fate more to be dreaded than death. But whatever society, the domestic circle, or bleeding hearts, may realize from these restorations, it is of small account compared with the reinstating of reason in the mind from which it had been dethroned; the restoring of delicate sentiments and affections, the perversion of which had changed the sweets of life to bitterness."

The first Superintendent of this Institution was Dr. George Chandler, afterwards Superintendent of the Massachusetts State Hospital, at Worcester, and now a resident of that city, but retired from active duty in the profession. His successors have been Dr. Andrew McFarland, now having charge of the State Hospital of Illinois, Dr. John E. Tyler, now at the head of the McLean Asylum, and Dr. J. P. Bancroft, the present incumbent. P. E.

ART. XXII.—*Border Lines of Knowledge in some Provinces of Medical Science.* An Introductory Lecture, delivered before the Medical Class of Harvard University, November 6th, 1861. By OLIVER WENDELL HOLMES, M. D., Parkman Professor of Anatomy and Physiology. Ticknor & Fields: Boston, 1862. 8vo. pp. 80.

INTRODUCTORY LECTURES are, for the most part, froth upon the ale of science. As the bitterness and exhilarating influences of the beverage are foreshadowed in the taste and effervescence of the foam, so the nature and the power of the science are often exhibited in that first lecture which introduces it to the attention of the student. The drinker looks with pleasing anticipations upon the bubbles as they rise in his glass, and the student is filled with bright expectations by the sparkling thoughts of the introductory as they fall from the lips of the enthusiastic professor. But as the evanescent foam is blown lightly away and forgotten even before the cup is drained, so the ephemeral introductory is remembered no longer than the hour in which it was pronounced. The specimen, now before us, of this peculiar kind of literature, has been clothed in a more enduring garb than is generally awarded to its fellows, and may possibly eke out a longer existence. It is written in a lively and attractive manner, and abounds in bold, dogmatic statements, which are, occasionally, more satirical, however, than truthful.

The object and the scope of the lecture are thus happily told:—

"Science is the topography of ignorance. From a few elevated points we triangulate vast spaces, enclosing infinite unknown details. We cast the lead, and draw up a little sand from abysses we shall never reach with our dredges.

"The best part of our knowledge is that which teaches us where knowledge leaves off and ignorance begins. Nothing more clearly separates a vulgar from a superior mind, than the confusion in the first between the little that it truly knows, on the one hand, and what it half knows and what it thinks it knows, on the other.

"That which is true of every subject is especially true of the branch of knowledge which deals with living beings. Their existence is a perpetual death and reanimation. Their identity is only an idea, for we put off our bodies many times during our lives, and dress in new suits of bones and muscles.[1]

> "'Thou art not thyself;
> For thou exist'st on many a thousand grains
> That issue out of dust.'

If it is true that we understand ourselves but imperfectly in health, it is more signally manifest in disease, where natural actions imperfectly understood, disturbed in an obscure way by half-seen causes, are creeping and winding along in the dark toward their destined issue, sometimes using our remedies as safe stepping-stones, occasionally, it may be, stumbling over them as obstacles.

"I propose in this lecture to show you some points of contact between our ignorance and our knowledge in several of the branches upon the study of which you are entering. I may teach you a very little directly, but I hope much more from the trains of thought I shall suggest. Do not expect too much ground to be covered in this rapid survey. Our task is only that of sending out a few pickets under the starry flag of science to the edge of that dark domain where the ensigns of the obstinate rebel, Ignorance, are flying undisputed. We are not making a reconnoissance in force, still less advancing with the main column. But here are a few roads along which we have to march together, and we wish to see clearly how far our lines extend, and where the enemy's outposts begin."

The salient points of the sciences of chemistry, human and pathological anatomy, microscopy, physiology, medicine, and surgery, are made to pass before the reader in cursory but piquant review. In the course of his remarks upon chemistry, Dr. Holmes takes occasion to dwell for a moment upon the fruitlessness of attempting to explain the essential nature of chemical affinities and crystalline types, and of determining the identity of the substances with which we deal, and the laws of their combination. In this connection he reminds us of the allotropic conditions of sulphur and phosphorus, and says:—

"These facts of allotropism have some corollaries connected with them rather startling to us of the nineteenth century. There may be other transmutations possible besides those of phosphorus and sulphur. When Dr. Prout, in 1840, talked about azote and carbon being 'formed' in the living system, it was looked upon as one of those freaks of fancy to which philosophers, like other men, are subject. But when Professor Faraday, in 1851, says, at a meeting of the British Association, that 'his hopes are in the direction of proving that bodies called simple were really compounds, and may be formed artificially as soon as we are masters of the laws influencing their combinations'—when he comes forward and says that he has tried experiments at transmutation, and means, if his life is spared, to try them again—how can we be surprised at the popular story of 1861, that Louis Napoleon has established a gold-factory and is glutting the mints of Europe with bullion of his own making?"

As we write there lies at our elbow a curious book from the pen of Dr. Louis Figuier, "Agrégé de chimie à l'Ecole de Pharmacie de Paris." The title of this book runs thus: "*L'Alchimie et les Alchimistes; Essai historique et critique sur la Philosophie hermétique.*" From its concluding pages we learn that seve-

[1] "Occasio enim præceps est propter artis materiam, dico autem corpus, quod continue fluit et momento temporis transmutatur."—GALEN, Com. in Aphorism. Hippoc I. 1.

ral memoirs were read in 1853 and 1854 before the Academy of Sciences, of Paris, the object of which was to show that "*les métaux ne sont pas des corps simples, mais bien des corps composés*," and that "*la production artificielle des métaux précieux est possible, est un fait avéré.*" The author of these memoirs is C. Théodore Tiffereau, "ancien élève et préparateur de chimie à l'école préparatoire de Nantes," who boldly said to the Academy "*J'ai découvert le moyen de produire de l'or artificiel, j'ai fait de l'or,*" and endeavoured, by a series of experiments, to convince his hearers that he spoke the truth, and was deceiving neither himself nor them. When the artificial production of gold is thus gravely announced at a sitting of the world-renowned Parisian Academy, as an accomplished fact, we need not, indeed, be surprised at the story of Louis Napoleon's gold-factory.

As we follow Dr. Holmes through his "Border Lines," we meet with passages, here and there, which we are strongly tempted to transfer to our pages. The following passing thrust at the quasi-science, phrenology, aptly illustrates the racy style in which the whole lecture is written:—

"By the manner in which I spoke of the brain, you will see that I am obliged to leave phrenology *sub Jove*—out in the cold—as not one of the household of science. I am not one of its haters; on the contrary, I am grateful for the incidental good it has done. I love to amuse myself in its plaster Golgothas, and listen to the glib professor, as he discovers by his manipulations

'All that disgraced my betters met in me.'

I loved of old to see square-headed, heavy-jawed Spurzheim make a brain flower out into a corolla of marrowy filaments, as Vieussens had done before him, and to hear the dry-fibred but human-hearted George Combe teach good sense under the disguise of his equivocal system. But the pseudo-sciences, phrenology and the rest, seem to me only appeals to weak minds and the weak points of strong ones. There is a *pica* or false appetite in many intelligences; they take to odd fancies in place of wholesome truth, as girls gnaw at chalk and charcoal. Phrenology juggles with nature. It is so adjusted as to soak up all evidence that helps it, and shed all that harms it. It crawls forward in all weathers, like Richard Edgeworth's hygrometer. It does not stand at the boundary of our ignorance, it seems to me, but is one of the will-o'-the-wisps of its undisputed central domain of bog and quicksand. Yet I should not have devoted so many words to it, did I not recognize the light it has thrown on human actions by its study of congenital organic tendencies. Its maps of the surface of the head are, I feel sure, founded on a delusion, but its studies of individual character are always interesting and instructive."

Of homœopathy, he writes:—

"It has unquestionably helped to teach wise people that nature heals most diseases without help from pharmaceutic art, but it continues to persuade fools that art can arrest them all with its specifics."

And again, in reference to changes in medical opinion and practice:—

"The practice of medicine has undergone great changes within the period of my own observation. Venesection, for instance, has so far gone out of fashion, that, as I am told by residents of the New York, Bellevue, and the Massachusetts General Hospitals, it is almost obsolete in these institutions, at least in medical practice.[1] The old Brunonian stimulating treatment has come into vogue again in the practice of Dr. Todd and his followers. The compounds of mercury have yielded their place as drugs of all work, and specifics for that very frequent subjective complaint, *nescio quid faciam*—to compounds of iodine.[2] Opium is believed in, and quinine, and 'rum,' using that expressive monosyllable

[1] A similar change has taken place also in English surgical practice. Sir W. Napier speaks of "that inveterate use of the lancet, which disgraced the surgery of the times"—the early years of this century. Life and Opinions of Sir Charles James Napier (London, 1857), vol. i. p. 153.

[2] Sir Astley Cooper has the boldness—or honesty—to speak of medicines which "are given as much to assist the medical man as his patient." Lectures (London, 1832), p. 14.

to mean all alcoholic cordials. If Molière were writing now, instead of *saignare, purgare,* and the other, he would be more like to say, *Stimulare, opium, dare et potassio-iodizare.*

"What is the meaning of these perpetual changes and conflicts of medical opinion and practice, from an early antiquity to our own time? Simply this: all 'methods' of treatment end in disappointment of those extravagant expectations which men are wont to entertain of medical art. The bills of mortality are more obviously affected by drainage, than by this or that method of practice. The insurance companies do not commonly charge a different percentage on the lives of the patients of this or that physician. In the course of a generation, more or less, physicians themselves are liable to get tired of a practice which has so little effect upon the average movement of vital decomposition. Then they are ready for a change, even if it were back again to a method which has already been tried, and found wanting.

"Our practitioners, or many of them, have got back to the ways of old Dr. Samuel Danforth, who, as it is well known, had strong objections to the use of the lancet. By and by a new reputation will be made by some discontented practitioner, who, tired of seeing patients die with their skins full of whiskey and their brains muddy with opium, returns to a bold antiphlogistic treatment, and has the luck to see a few patients of note get well under it. So of the remedies which have gone out of fashion and been superseded by others. It can hardly be doubted that they will come into vogue again, more or less extensively, under the influence of that irresistible demand for change just referred to.

"Then will come the usual talk about a change in the character of disease, which has about as much meaning as that concerning 'old-fashioned snow-storms.' 'Epidemic constitutions' of disease mean something, no doubt; a great deal as applied to malarious affections; but that the whole type of diseases undergoes such changes that the practice must be reversed from depleting to stimulating, and *vice versa*, is much less likely than that the methods of treatment go out of fashion and come in again."

In these very positive assertions of our author, error and truth, we think, are mingled together. That much mischief has resulted from the blind and overweening confidence of this or that physician in such a drug, or such a method of medication, cannot be gainsaid, but that the great radical changes which medical treatment in certain classes of disease has undergone from time to time, is the result merely of fashion or the caprice of practitioners of medicine, is wholly inadmissible. Such an opinion is in itself an insult, not merely to the therapeutic skill, but also to the good sense and integrity of every physician who follows his noble calling as a conscientious man, and an earnest and enlightened student. The professed wit will sacrifice his best friend rather than forego the utterance of a jest. Here and there in the writings of our author, the evidence is patent that the opportunity to enunciate some brilliant expression or mirth-provoking comparison, has overcome the dictum of sober judgment, and ignored the very facts which falsify the witticism. When Dr. Holmes tells us that the "usual talk" about a change in the character of disease has as much meaning as that concerning "old-fashioned snow-storms," he is doubly unfortunate, inasmuch as the facts of the historical record, relating both to disease and climate, are all against him. Let him refer, on the one hand, to the chapter on physical climate, in Milner's "Gallery of Nature," and on the other, to the closing chapters of Dr. Edward Smith's admirable and original treatise on "Health and Disease," noticed by us in the preceding number of this journal. Other works, bearing upon this subject, we might readily cite, but the two mentioned are just at hand, and they contain facts and arguments sufficient to refute the idea so lightly, and, must we say it, so thoughtlessly advanced by our author.

As an eminent medical teacher occupying a high position, and as a writer of great ability and weight, Dr. Holmes should, as he is well able to do, supply his hearers with the good and wholesome wheat of science from which the chaff of error has been carefully and patiently winnowed. J. A. M.